Expert Systems with Applications

An International Journal

LIST OF CONTENTS
AND
AUTHOR INDEX
VOLUME 6, 1993

Pergamon Press
New York Oxford Seoul Tokyo

EXPERT SYSTEMS WITH APPLICATIONS

An International Journal

EDITOR-IN-CHIEF

Jay Liebowitz, D.Sc.
Department of Management Science
George Washington University
Washington, DC 20052

EDITORIAL ADVISORY BOARD

Edward Feigenbaum
Stanford University, USA

Lance B. Eliot
University of Southern California, USA

Y. T. Chien
National Science Foundation, USA

Dianne C. Berry
University of Reading, UK

Dan Yurman
EG & G Idaho, USA

Walter Reitman
Rensselaer Polytechnic Institute, USA

Shri K. Goyal
GTE Laboratories, USA

Daniel E. O'Leary
University of Southern California, USA

Richard G. Vedder
University of North Texas, USA

James L. Rash
NASA Goddard Space Flight Center, USA

Louis L. Odette
Applied Expert Systems, Inc., USA

Randall Shumaker
Naval Research Laboratory, USA

David Bendel Hertz
University of Miami, USA

A. Desai Narasimhalu
National University of Singapore

Patricia Lightfoot
NASA Goddard Space Flight Center, USA

Larry Harris
AI Corporation, USA

Mark Fox
Toronto, Ontario, Canada

Jae Kyu Lee
Korea Advanced Institute of Science and Technology

I. Burhan Turksen
University of Toronto, Canada

David J. Gorney
Rawson Technologies, Inc., USA

Ernest H. Forman
George Washington University, USA

David King
Execucom Systems, USA

Roar Fjellheim
Computas Expert Systems, Norway

Milton White
Datanamics Inc., USA

Jon R. Wright
AT&T Bell Laboratories, USA

Roy Rada
University of Liverpool, England

John P. Coyne
George Washington University, USA

John H. Carson
George Washington University, USA

Daniel Schutzer
Citicorp Investment Bank, USA

Paul Harmon
Harmon Associates, USA

Francisco J. Cantu
Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico

Masao Matsumoto
NEC Corporation, Japan

Patrick F. Perez
Neuron Data, USA

Brian Gaines
University of Calgary, Canada

Peter E. Hart
Syntelligence, USA

Michel Clerget
Cognitech, France

Kenneth J. Fordyce
IBM, USA

James R. Slagle
University of Minnesota, USA

Eliot Weinman
Software Productivity Group, USA

Randall Davis
Massachusetts Institute of Technology, USA

E. Balagurusamy
National Centre for Expert Systems, India

Steven H. Kim
Massachusetts Institute of Technology, USA

Dietter Specht
IPK/Berlin, Germany

Vladimir Milacic
University of Belgrade, Yugoslavia

N. Rao Machiraju
Apple Computer, Inc., USA

Hans Bergkvist
ATTEXOR S. A., Switzerland

Laura C. Davis
U.S. Navy Center for Applied Research in Artificial Intelligence, USA

Jerald Feinstein
MITRE, USA

Efraim Turban
California State University–Long Beach, USA

Bernt Bremdal
GeoKnowledge, Norway

Juan Pazos
Universidad Politecnica de Madrid, Spain

Production Editor: Kathleen M. Major, Pergamon Press, Tarrytown, New York.

Editorial Office: Jay Liebowitz, School of Government and Business Administration, Department of Management Science, George Washington University, Washington, DC 20052.

Publishing, Subscription, and Advertising Offices: Pergamon Press Inc., 660 White Plains Road, Tarrytown, New York 10591-5153, USA, INTERNET "PPI@PERGAMON.COM"; or Pergamon Press Ltd., Headington Hill Hall, Oxford OX3 0BW, England.

Published Quarterly. *Annual Institutional Subscription Rate* (1993): £230.00 (US$368.00). Sterling prices are definitive. US dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice.

Expert Systems With Applications, Vol. 6, pp. III–VII, 1993
Printed in the USA.

0957-4174/93 $6.00 + .00
© 1993 Pergamon Press Ltd.

LIST OF CONTENTS

Volume 6, Number 1 January–March, 1993

CONTENTS

Special Issue:
Case-Based Reasoning and Its Applications

Ting-Peng Liang **Efraim Turban**	1	Guest Editors' Note
Karen Ketler	3	Case-Based Reasoning: An Introduction
Robert McCartney	9	Episodic Cases and Real-Time Performance in a Case-Based Planning System
Alok R. Chaturvedi	23	Acquiring Implicit Knowledge in a Complex Domain
Ravi C. Vellore **Ajay S. Vinze** **Arun Sen**	37	MODELER: Incorporating Experiences to Support Model Formulation—A Case-Based Planning Approach
Daniel E. O'Leary	57	Verification and Validation of Case-Based Systems
Robert T. Chi **Minder Chen** **Melody Y. Kiang**	67	Generalized Case-Based Reasoning System for Portfolio Management
Youngohc Yoon **Angela D. Acree** **Lynn L. Peterson**	77	Development of a Case-Based Expert System: Application to a Service Coordination Problem
Jae Kyu Lee **Min Yong Kim**	87	Case-Based Learning for Knowledge-Based Optimization Modeling System: UNIK-CASE
Steve Mott	97	Case-Based Reasoning: Market, Applications, and Fit With Other Technologies
	105	NTIS Section
	I	Software Survey Section
	V	New Patents

Volume 6, Number 2 April–June, 1993

CONTENTS

Nicholas M. Avouris **Sandra Finotti**	109	User Interface Design to Expert Systems Based on Hierarchical Spatial Representations
Li D. Xu **Ling X. Li**	119	An Expert System Approach to AIDS Intervention and Prevention
Carl G. Looney	129	Neural Networks as Expert Systems
David R. B. Stockwell	137	LBS: Bayesian Learning System for Rapid Expert System Development

Gideon Cohen	149	Knowledge-Based Sequence of Operations to Convert Design Goals to a Manufacturing Process
J. L. Chen **S. H. Sun** **W. C. Hwang**	159	An Intelligent Database System for Composite Material Selection in Structural Design
George C. Philip	169	Guidelines on Improving the Maintainability and Consultation of Rule-Based Expert Systems
Ritu Agarwal **Ramu Kannan** **Mohan Tanniru**	181	Formal Validation of a Knowledge-Based System Using a Variation of the Turing Test
Guisseppi A. Forgionne	193	IMDS: A Knowledge-Based System to Support Concurrent Engineering at Westinghouse
Saifur Rahman **Mark Lauby**	203	Identification of Potential Areas for the Use of Expert Systems in Power System Planning
	213	NTIS Section
	I	Software Survey Section: CORNELIUS
	V	New Patents

Volume 6, Number 3 July–September, 1993

CONTENTS

Special Issue:
Scheduling Expert Systems and Their Performances

Jae K. Lee **Mark S. Fox** **Paul R. Watkins**	217	Guest Editors' Note
Jae K. Lee **Min Soo Suh** **Mark S. Fox**	219	Contingencies for the Design of Scheduling Expert Systems
Jay Liebowitz **Patricia Lightfoot**	231	Scheduling Approaches in Expert Systems: A Study of Their Applicability
Frank von Martial **Frank Victor**	237	Preparation and Support of Scheduling Employing Knowledge Acquisition, Planning, and Rule-Based Decision Making
Bing Liu	257	Problem Acquisition in Scheduling Domains
Alok R. Chaturvedi	267	FMS Scheduling and Control: Learning to Achieve Multiple Goals
Manuel Laguna **Fred Glover**	287	Integrating Target Analysis and Tabu Search for Improved Scheduling Systems
Allen E. Smith **Timothy D. Fry** **Patrick R. Philipoom** **James R. Sweigart**	299	A Comparison of Two Intelligent Scheduling Systems for Flexible Manufacturing Systems

Suranjan De **Anita Lee**	309	Flexible Assembly Scheduling Using a Knowledge-Based Approach
Youpeng Zong **Taeyong Yang** **James P. Ignizio**	327	An Expert System Using an Exchange Heuristic for the Resource-Constrained Scheduling Problem
Bing Liu	349	Knowledge-Based Factory Scheduling: Resource Allocation and Constraint Satisfaction
K. P. Chow **C. K. Hui**	361	Knowledge-Based System for Rostering
Norman Sadeh	377	MICRO-BOSS: A Micro-Opportunistic Factory Scheduler
	393	NTIS Section
	I	Software Survey Section
	V	New Patents

Volume 6, Number 4 October–December, 1993

CONTENTS

Special Issue:
Medical Applications of Expert Systems

Vicente Moret-Bonillo **Amparo Alonso-Betanzos**	397	Guest Editors' Note
Jose C. Principe **Tae-Gyu Chang** **Sunit Gala** **Ana Tome**	399	Information Processing Models for Sleep Staging
Benoit M. Dawant **Serdar Uckun** **Eric J. Manders** **Daniel P. Lindstrom**	411	SIMON: A Distributed Computer Architecture for Intelligent Patient Monitoring
S. Barro **J. Presedo** **J. Vila** **R. Ruiz** **F. Palacios**	421	Patient Management in CCUs: Need for an Intelligent Interpretation of Signals
P. L. M. Kerkhof **M. P. van Dieijen-Visser** **R. Koenen** **J. J. A. Schreuder** **H. G. de Bruin** **K. Gill**	433	The Medwise Diagnostic Module as a Consultant
Klaus-Peter Adlassnig **Harald Leitich** **Gernot Kolarz**	441	On the Applicability of Diagnostic Criteria for the Diagnosis of Rheumatoid Arthritis in an Expert System

Alejandro Pazos Sierra
Antonio Blanco Ferro
Victor Maojo Garcia
Fernando Martín Sanchez
José M. Barreiro Sorrivas

449 MESTRIMAN: An Expert System for Medical Triage and Clinical Management of Patients in Catastrophes

Norberto Ezquerra
Rakesh Mullick
C. David Cooke
Elizabeth G. Krawczynska
Ernest V. Garcia

459 PERFEX: An Expert System for Interpreting 3D Myocardial Perfusion

Alessandro D'Atri
Laura Tarantino
Gabriele Di Stefano

469 On the Representation and Management of Medical Records in a Knowledge-Based System

483 NTIS Section

I List of Contents and Author Index Volume 6, 1993

IX Software Survey Section

XIII New Patents